UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/926,609	04/03/2002	Rino Messere	214502US0PCT	6443

22850 7590 06/07/2002

OBLON SPIVAK MCCLELLAND MAIER & NEUSTADT PC
FOURTH FLOOR
1755 JEFFERSON DAVIS HIGHWAY
ARLINGTON, VA 22202

EXAMINER
UHLIR, NIKOLAS J

ART UNIT	PAPER NUMBER
1773	7

DATE MAILED: 06/07/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/926,609	Applicant(s) MESSERE ET AL.	
	Examiner Nikolas J. Uhlir	Art Unit 1773	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Peri d for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12 and 14-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12 and 14-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3 .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☒ Other: *International search report* .

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Specification

2. The abstract of the disclosure is objected to because it is more than one paragraph. Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-2, 4-9, and 16-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Creasy (US5262475).

5. Creasy teaches a polymer composition which when cured exhibits superior anti-fogging properties (column 2, lines 34-35). This polymer composition is used as a coating for vehicle windshields, windows, and mirrors (column 1, lines 18-20). The composition is comprised of a water-soluble polyvinyl alcohol (PVA) polymer and a poly-n-vinylpyrollidone (PnVP) polymer (column 2, lines 35-39). Alternatively, the PnVP component of the mixture can be comprised of vinylpyrollidone copolymers (column 4, lines 38-46). The composition can also include a polymer crosslinking agent such as a melamine compound (column 2, lines 47-51). The crosslinking of one of the PVA or

PnVP polymers renders the mixture of these two polymers insoluble in water, yet does not affect the hydrophilic character of the mixture (column 4, lines 6-10). Creasy does not specifically teach that this polymer composition is absorbent, however, the examiner takes the position that this limitation is met, as the materials used by Creasy match the materials stated by the applicant on page 5, lines 13-27 of the specification. This composition, when coated onto a substrate, renders the surface of the substrate substantially non-fogging, or hydrophilic (column 2, lines 54-55). The substrate is preferably manufactured from a clear glass or plastic (column 6, lines 5-8). Although Creasy does not specifically teach the porosity or pore diameter of the anti-fogging coating composition in the wet state as required by claims 8, 9, 16, and 17, the examiner takes the position that these limitations are inherently met. The hydrophilic absorbent polymer composition taught by Creasy et al. for use as an anti-fogging coating material is identical to one of the hydrophilic absorbent polymers disclosed by the applicant on page 5, lines 13-27 of the specification. The examiner takes the position that the porosity and pore diameters required by these claims are material properties inherent to the materials used. Thus, because the materials used by Creasy match the materials specified by the applicant as suitable hydrophilic absorbent polymers, the limitations of these claims are necessarily met.

6. Claims 1-4, 7-10, and 15-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Taniguchi et al. (US4478909).

7. Taniguchi et al. teaches an anti-fogging film having excellent surface hardness and durability (column 1, lines 4-6). This film comprises 100 parts by weight of polyvinyl

alcohol, 60-300 parts by weight of finely divided silica having a particle size of 5-200nm, and .5-30 parts by weight of an organic silicon compound (or hydrolysates thereof) having the formula $R^1R_a^2Si(OR^3)_{3-a}$, wherein R^1 is an organic group having 1-10 carbon atoms, R^2 is a hydrocarbon group having 1-6 carbon atoms, R^3 is an alkyl, alkoxyalkyl, or acyl group, and a=0 or 1. This solution, when coated onto the surface of a substrate, forms an anti-fogging film (column 2, lines 45-48). This film typically has a thickness in the range of .001-.5μm (column 5, lines 35-42). Taniguchi et al. also teaches coating a substrate with an under layer of material, and then coating the anti-fogging material on the under layer (column 3, lines 20-25). The total thickness of both the under layer and surface layer preferably does not exceed 30μm (column 5, lines 54-56). Substrates suitable for these coatings include plastics, inorganic glasses, and windows (column 8, lines 12-25). Although Taniguchi et al. does not specifically teach the porosity or pore diameter of the anti-fogging coating composition in the wet state as required by claims 8, 9, 16, and 17, the examiner takes the position that these limitations are inherently met. The antifogging polymer composition taught by Taniguchi et al. is identical to one of the hydrophilic absorbent polymers disclosed by the applicant on page 5, lines 13-27 of the specification. The examiner takes the position that the porosity and pore diameters required by these claims are material properties inherent to the materials used. Thus, because the materials used by Taniguchi et al. match the materials specified by the applicant as suitable hydrophilic absorbent polymers, the limitations of these claims are necessarily met. Further, although Taniguchi et al. does not teach that the finely divided silica is porous as required by claim 15, the examiner takes the

position that this limitation is necessarily met. It is well known in the art that any material, regardless of its form (i.e coating, particle, flake, sheet, crystalline, etc...), will inherently contain small imperfections such as micro cracks, pores, stacking faults etc... **to some degree**. The applicant never discloses or indicates a required or desired level of porosity for the filler material in either the claims or the specification. Thus, **any** inorganic or organic filler meets this limitation.

8. Claims 1, 2, 14, and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Matsumoto (JP10167764).

9. For the purpose of this examination, the examiner has relied upon a machine translation of the Matsumoto et al. patent to form the basis for the following rejection. The applicant is informed that all references to Matsumoto refer to the machine translation or the English abstract as indicated. A copy of this machine translation has been attached to this action.

10. Matsumoto teaches a method for preventing the formation of ice on the surface of a substrate. This method comprises applying a synthetic resin film having anti-icing properties to the surface of a substrate (Abstract). Matsumoto teaches that suitable substrates for the anti-icing material include the windshield of a car, glass panes of household windows, and the inspection port (window) of a freezer (translation, page 1, section 2 and page 3, section 13). The material is placed on the face of the substrate that is contact with a cold atmosphere, to prevent that face from freezing over (translation page 1, section 2 and 3).

11. Claims 1-2, 4, 7, and 10-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Parker et al. (US4767671).

12. Parker et al. teaches an anti-mist coating for glass or plastic substrates (column 1, lines 5-6). This anti-mist coating comprises hydrophilic polyurethane that can contain 35-65% of water when hydrated and has a thickness of 3-50μm in its anhydrous state (column 2, lines 44-51). Parker et al. also teaches that this coating can be used on a double glazing used in greenhouses to prevent the double glazing from misting, thereby limiting the transmission of light (column 4, lines 8-19).

13. Claims 1-2, 4-5, 7-11, and 15 rejected under 35 U.S.C. 102(b) as being anticipated by Ohtaka et al. (EP0908500A1).

14. Ohtaka et al. teaches anti-fog article comprising a substrate with surface coated with an anti-fog material (page 2, section 0008). The anti-fog material is hydrophilic, moisture absorptive, insoluble, and has high surface hardness (page 2, section 0007). The anti-fog material is comprised of a polyacrylic acid compound, polyvinyl alcohol, and acetylacetone. It may also contain sodium silicate (page 2, section 0009). Suitable substrates include glass and plastic articles such as lenses and optical parallel plates. The film is formed to a thickness between .01-10μm depending on the type of substrate. Although Ohtaka et al. does not specifically teach the porosity or pore diameter of the anti-fogging coating composition in the wet state as required by claims 8, 9, 16, and 17, the examiner takes the position that these limitations are inherently met. The antifogging polymer composition taught by Ohtaka et al. is identical to one of the hydrophilic absorbent polymers disclosed by the applicant on page 5, lines 13-27 of the

specification. The examiner takes the position that the porosity and pore diameters required by these claims are material properties inherent to the materials used. Thus, because the material used by Ohtaka et al. matches one of the material specified by the applicant as a suitable hydrophilic absorbent polymer, the limitations of these claims are necessarily met. Further, although Ohtaka et al. does not teach that the sodium silicate in the anti-fog material is porous as required by claim 15, the examiner takes the position that this limitation is necessarily met. It is well known in the art that any material, regardless of its form (i.e coating, particle, flake, sheet, crystalline, etc...), will inherently contain small imperfections such as microcracks, pores, stacking faults etc... **to some degree**. The applicant never discloses or indicates a required or desired level of porosity for the filler material in either the claims or the specification. Thus, **any** inorganic or organic filler meets this limitation.

Claim Rejections - 35 USC § 103

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

16. Claims 1, 11, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Florentin et al. (US6052965) in view of Matsumoto (JP10167764).

17. Florentin et al. teaches a door or wall of an environmental chamber, in particular a glazed door or wall, and more particularly a refrigerated chamber in which cold or frozen products are displayed (column 1, lines 7-13). This environmental chamber

consists of an insulating panel comprising at least two glass substrates, which are separated from one another via surfaces mounts. The space between the two glass sheets is a vacuum (column 3, lines 5-10). Florentin et al. teaches that this vacuum insulating glazing panel exhibits better thermal insulating properties then prior known insulating panels (column 4, lines 25-32 and Table 1). Florentin teaches depositing a thin layer of conductive material around the periphery of one of the surfaces of the vacuum insulating glazing, and a depositing separate conductive material on the center portion of the same surface, such that the center and periphery portions can be independently heated via a current provided by electrodes to prevent the appearance of condensation on the surface of the panel (column 6-20)

18. Florentin et al. does not teach applying an antifrosting material to a surface of a vacuum insulating panel that comprises at least 2 glass sheets.

19. Matsumoto teaches a method for preventing the formation of ice on the surface of a substrate. This method comprises applying a synthetic resin film having anti-icing properties to the surface of a substrate (Abstract). Matsumoto teaches that suitable substrates for the anti-icing material include the windshield of a car, glass panes of household windows, and the inspection port (window) of a freezer (translation, page 1, section 2 and page 3, section 13). The material is placed on the face of the substrate that is contact with a cold atmosphere, to prevent that face from freezing over (translation page 1, section 2 and 3). This material can be opaque or transparent (page 3, section 13).

20. Therefore it would have been obvious to one with ordinary skill in the art at the time the invention was made to substitute the anti-icing synthetic resin taught by Matsumoto for the conductive layers taught by Florentin et al.

21. One would have been motivated to make these modifications due to the fact that the Matsumoto film does not require power to operate, is less complex to apply, and is used for the same purpose/same environment as the conductive layers taught by Florentin et al.

Conclusion

22. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following pieces of prior art are pertinent to claims 1, 2, and 4-5: SU1101444 (Lengd Rail Transp), printed 7/7/1984, JP02110119 (Mitsui), printed 4/23/1990, JP01156390 (Oji), printed 6/19/1989, JP52063186 (Shin), printed 5/25/1977, JP59021541 (Katsuo), printed 2/3/1984. All of these documents were cited by the International search report.

23. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nikolas J. Uhlir whose telephone number is 703-305-0179. The examiner can normally be reached on Mon-Fri 7:30 am - 5 pm.

24. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Thibodeau can be reached on 703-308-2367. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

25. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-0389.

nju
June 4, 2002

Paul Thibodeau
Supervisory Patent Examiner
Technology Center 1700